

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
14 April 2005 (14.04.2005)

PCT

(10) International Publication Number  
**WO 2005/032418 A3**

(51) International Patent Classification<sup>7</sup>: **A61F 2/02**

(21) International Application Number:  
PCT/US2004/032639

(22) International Filing Date: 1 October 2004 (01.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/507,734 1 October 2003 (01.10.2003) US

(71) Applicant (for all designated States except US): **UNIVERSITY OF WASHINGTON** [US/US]; Office of Technology Transfer, 4311 - 11th Avenue NE, Suite 500, Seattle, WA 98105 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **RATNER, Buddy, D.** [US/US]; 1612 Bigelow Avenue North, Seattle, WA 98109 (US). **MARSHALL, Andrew** [GB/GB]; 3521 SW 327th St., Federal Way, WA 98203 (GB).

(74) Agent: **BLÖCHLINGER, Karen**; Christensen O'Connor Johnson Kindness PLLC, 1420 5th Avenue, Suite 2800, Seattle, WA 98101-2347 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
2 June 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: NOVEL POROUS BIOMATERIALS

(57) Abstract: The invention provides porous biomaterials and methods for forming porous biomaterials. The porous biomaterials of the invention comprise a biocompatible polymer scaffold defining an array of pores, wherein substantially all the pores have a similar diameter, wherein the mean diameter of the pores is between about 20 and about 90 micrometers, wherein substantially all the pores are each connected to at least 4 other pores, and wherein the diameter of substantially all the connections between the pores is between about 15 % and about 40 % of the mean diameter of the pores. The invention also provides implantable devices comprising a layer of a biomaterial, and methods for promoting angiogenesis in and around an implantable biomaterial.



**WO 2005/032418 A3**